

FORM PTO-1449

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.
ESLABS.003AAPPLICATION NO.
09/593,587INFORMATION DISCLOSURE STATEMENT
BY APPLICANTAPPLICANT
Knowles, et al.FILING DATE
06/13/00GROUP
3743

(USE SEVERAL SHEETS IF NECESSARY)

RECEIVED
SEP 28 2001
TC 3700 MAIL ROOM

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)
<i>HA</i>	1	2,542,637	2/20/51	Method of Rectifying a Neutral Salt Heat Treating Bath <i>DE POY</i>	148	15	
	2	3,294,880	12/27/66	Continuous Method of Manufacturing Ablative and Refractory Materials <i>TURKAT</i>	264	29	
	3	3,375,308	3/26/68	Method of Making High Purity and Non-Melting Filaments <i>TURKAT</i>	264	29	
	4	3,531,249	9/29/70	Pyrolytic Graphite Filaments <i>TURKAT</i>	23	209.2	
	5	3,543,842	12/1/70	Device for Elastic and Heat Conducting Connection of Thermo-Couples <i>MERGES</i>	165	82	
	6	3,609,992	10/5/71	Hermetically Sealed Box for Maintaining a Semiconductor Radiation Detector at a Very Low Temperature <i>KUNIIYA ET AL.</i>	62	514	
	7	3,969,754	7/13/76	Semiconductor Device Having Supporting Electrode Composite Structure of Metal Containing Fibers <i>CACHEUX</i>	357	65	
	8	4,161,747	7/17/79	Shock Isolator for Operating a Diode Laser on a Closed-Cycle Refrigerator <i>JENNINGS</i>	357	82	
	9	4,318,954	3/9/82	Printed Wiring Board Substrates for Ceramic Chip Carriers <i>JENSEN</i>	428	209	
	10	4,414,142	11/8/83	Organic Matrix Composites Reinforced with Intercalated Graphite <i>VOGEL ET AL.</i>	252	506	
	11	4,415,025	11/15/83	Thermal Conduction Element for Semiconductor Devices <i>HORVATH</i>	165	185	
	12	4,424,145	1/3/84	Calcium Intercalated Boronated Carbon Fiber <i>SARA</i>	252	509	
	13	4,435,375	3/6/84	Method for Producing a Carbon Filament and Derivatives Thereof <i>TAMURA ET AL.</i>	423	439	
	14	4,470,063	9/4/84	Copper Matrix Electrode Having Carbon Fibers Therein <i>ARAKAWA ET AL.</i>	357	67	
	15	4,482,912	11/13/84	Stacked Structure Having matrix-Fibered Composite Layers and a Metal Layer <i>CHIBA ET AL.</i>	357	67	
	16	4,485,429	11/27/84	Apparatus for Cooling Integrated Circuit Chips <i>MITTAL</i>	361	386	
	17	4,591,659	5/27/86	Multilayer Printed Circuit Board Structure <i>LEBOWITZ</i>	174	68.5	
	18	4,630,174	12/16/86	Circuit Package with External Circuit Board and Connection <i>KAUFMAN</i>	361	388	
	19	4,749,514	6/7/88	Graphite Intercalation Compound Film and Method of Preparing the Same <i>MURAKAMI ET AL.</i>	252	500	
	20	4,816,289	3/28/89	Process for Production of a Carbon Filament <i>KOMATSU ET AL.</i>	423	447.3	
	21	4,849,858	7/18/89	Composite Heat Transfer Means <i>GRAPES ET AL.</i>	361	388	
	22	4,867,235	9/19/89	Composite Heat Transfer Means <i>GRAPES ET AL.</i>	165	185	

EXAMINER

Tonal - Jcs

DATE CONSIDERED

9/5/02

*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

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<i>JH</i>	23	4,878,152	10/31/89	Mounting for Printed Circuits Forming a Heat Sink with Controlled Expansion	361	386	
	24	4,933,804	6/12/90	Interference Suppression for Semi-Conducting Switching Devices	361	111	
	25	4,966,226	10/30/90	Composite Graphite Heat Pipe Apparatus and Method	165	104.26	
	26	4,985,805	1/15/91	Device for the Cooling of Optoelectronic Components and Use of a Flange Joint Used Thereof	361	386	
	27	5,014,161	5/7/91	System for Detachably Mounting Semiconductors on Conductor Substrate	361	388	
	28	5,077,637	12/31/91	Solid State Directional Thermal Cable	361	386	
	29	5,111,359	5/5/92	Heat Transfer Device and Method	361	388	
	30	5,150,748	9/29/92	Advanced Survivable Radiator	165	41	
	31	5,212,625	5/18/93	Semiconductor Module Having Projecting Cooling Fin Groups	361	383	
	32	5,224,030	6/29/93	Semiconductor Cooling Apparatus	361	386	
	33	5,260,124	11/9/93	Interrelated Hybrid Graphite Fiber Composite	428	257	
	34	5,287,248	2/15/94	Metal Matrix Composite Heat Transfer Device and Method	361	708	
	35	5,316,080	5/31/94	Heat Transfer Device	165	185	
	36	5,323,294	6/21/94	Liquid Metal Heat Conducting Member and Integrated Circuit Package Incorporating Same	361	699	
	37	5,389,400	2/14/95	Method for Making a Diamond/Carbon/Carbon Composite Useful as an Integral Dielectric Heat Sink	427	249	
	38	5,402,004	3/28/95	Heat Transfer Module for Ultra High Density and Silicon on Silicon Packaging Applications	361	747	
	39	5,424,916	6/13/95	Combination Conductive and Convective Heatsink	361	698	
	40	5,428,601	1/9/96	Method and Device for the Production of Carbon Nanotubes	204	173	
	41	5,494,753	2/27/96	Articles Having Thermal Conductors of Graphite	428	408	
	42	5,520,976	5/28/96	Composite Enclosure for Electronic Hardware	428	36.3	
	43	5,523,260	6/4/96	Method for Heatsinking a Controlled Collapse Chip Connection Device	437	209	
	44	5,542,471	8/6/96	Heat Transfer Element Having the Thermally Conductive Fibers	165	170	
*	45	5,566,762	10/22/96	High Heat Density Transfer Device	165	185	
<i>JH</i>	46	5,591,312	1/7/97	Process for Making Fullerene Fibers	204	157.41	

EXAMINER

James R. Leo

DATE CONSIDERED

9/5/02

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* previously cited on PTO-892

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<i>11</i>	47	5,604,037	2/18/97	Diamond/Carbon/Carbon Composite Useful as an Integral Dielectric Heat Sink	428	408	
<i>11</i>	48	5,608,267	3/4/97	Molded Plastic Semiconductor Package Including Heat Spreader	257	796	
<i>11</i>	49	5,753,088	5/19/98	Method for Making Carbon Nanotubes	204	173	
<i>11</i>	50	5,814,290	9/29/98	Silicon Nitride Nanowhiskers and Method of Making Same	423	344	
<i>11</i>	51	5,830,326	11/3/98	Graphite Filaments Having Tubular Structure and Method of Forming the Same	204	173	
<i>11</i>	52	6,063,243	5/16/00	Method for Making Nanotubes and Nanoparticles	204	164	

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO

EXAMINER INITIAL	OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)		
<i>11</i>	1	Ren, et al., Synthesis of Large Arrays of Well-Aligned Carbon Nanotubes on Glass, SCIENCE, Vol. 282, pp. 105-107, November 6, 1988	
<i>11</i>	2	Huang, et al., Growth of Highly Oriented Carbon Nanotubes of Plasma-Enhanced Hot Filament Chemical Vapor Deposition, APPLIED PHYSICS LETTERS, Vol. 73, No. 6, pp. 3845-3847, December 28, 1998	
<i>11</i>	3	Li, et al., Highly-ordered Carbon Nanotube Arrays for Electronics Applications, APPLIED PHYSICS LETTERS, Vol. 75, No. 3, pp. 367-369, July 19, 1999	

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EXAMINER	<i>Donald A. Lee</i>	DATE CONSIDERED	<i>9/5/02</i>
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